

Test Driven Development

with a MATLAB example

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Test Driven Development

Add a broken test

that covers the capability that you want to add or bug you wish to fix

Run all tests, make sure that new one fails

to test the test and framework

Write simplest code possible

to satisfy the test

Run all tests

to make sure that the new code fixes the new test and does not break existing capability

Refactor

to clean up new code and remove duplication

Why

Custom debugger
Mobility to respond to unforeseen challenges
Enables team development

MATLAB Example

all lines in a script beginning with `%!` are eval'ed. The functions `assert`, `assert_equal`, `assert_within`, and `assert_nan` are defined. see `unit_test.m` for more examples.

Failing test

```
%! assert_equal(1,simple_fail)
```

The function `simple_fail` is not defined

Passing test

```
function y = simple_pass()

y = 1

%! assert_equal(1,simple_pass)
```

Resources

http://en.wikipedia.org/wiki/Test-driven_development

Talk and Example

<http://github.com/mikepark/tdd>

Testing Frameworks

<http://c2.com/cgi/wiki?TestingFramework> (see MATLAB section)

Version Control

<http://git-scm.com/>
<http://subversion.tigris.org/>
<https://www.cvshome.org/>

Books

Andrew Hunt and David Thomas, *The Pragmatic Programmer: From Journeyman to Master*.
Tom Demarco and Timothy Lister, *Peopleware : Productive Projects and Teams*, 2nd Ed.